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ABSTRACT

The Department of Measurement, Statistics, and Evaluation (EDMS) at the University of Maryland is working to develop Master's degree programs that are oriented around developing assessment professionals for work in applied settings. Two fundamentally different sets of experiences are being developed: (1) assessment development, administration, and scoring; and (2) data analysis and reporting. Organizations interested in participation would be asked to transfer funds for each intern they sponsor and provide professional supervision of the intern's experiences. The intern would spend approximately 15 hours a week for a significant period of time at the organization's job site. The student, who would learn by doing, would undertake assessment related duties and then prepare a paper that can be used to assess the student's learning. The student may also use the paper to fulfill the "Scholarly Paper" requirement of the Master of Arts degree. All students would complete a core of courses in assessment and measurement and then would choose between two specializations. Competencies are described for each specialization and a sample schedule is presented. Prospective sponsoring organizations have been interested in employing graduates of a program of this type, but many have been reluctant to contribute their sites as placements for paid interns. Course developers expect that the interns will increase rather than drain the capacity of the organization. (SLD)

Educating Applied Assessment Professionals at the Masters Level

William D. Schafer

This paper is prepared for the:
Annual Meeting of the American Educational Research Association in Montreal Canada
April 2000

Educating Applied Assessment Professionals at the Masters Level

William D. Schafer
University of Maryland

We have been developing masters programs in my department (EDMS) at the University of Maryland that are oriented around developing assessment professionals for work in applied settings. We are planning to implement two fundamentally different sets of experiences.

Assessment Development, Administration, and Scoring
Data Analysis and Reporting

We currently have received positive expressions of interest from three organizations to fund and supervise one or more students in an internship arrangement. The organization would be asked to transfer to the EDMS department $14,500 and to provide professional supervision of the intern's experiences.

The intern would spend approximately fifteen hours per week for a significant period of time engaged in a planned series of activities at the organization's job site. The activities the intern would be asked to undertake would be appropriate for someone employed for the relevant position description in that organization, with the degree of responsibility and supervision that the organization is comfortable assigning to the individual. Our intent is for the student to "learn by doing" as well as to document the knowledge, skills, and abilities the student develops. We hope each organization will find it mutually beneficial to help us use these programs to train professionals who can fill the sorts of assessment-related positions that exist in their and similar organizations. We also hope to generate long-term arrangements with these outside organizations through which students are regularly placed in routine programs of proven value to both the student and the organization.

An expectation would also be for an individual in the organization to act as local supervisor for the student's internship coursework credits. This would entail working with the student and an EDMS faculty member at the beginning of the experience to negotiate a project, hopefully part of the normal job activities of the student, that would result in a formal paper written by the student and approved by the other two individuals at the end of each semester. The intent is to provide an academic component over and above the student's day-to-day job activities and to generate a document that can be used to evaluate the student's overall learning. The paper will be deposited in the EDMS department office and will be the means to satisfy the "Scholarly Paper" requirement of the Graduate School for a Master of Arts degree. Some face-to-face meetings during the project between the student, the faculty member, and the supervisor would be arranged.

Paper presented at the Annual Meeting of the National Council on Measurement in Education in New Orleans, April 27, 2000

Masters-Level Programs for Assessment Professionals in Applied Settings

All students would complete this core of courses (these are already taught on campus):

Classroom Assessment (a measurement course for prospective teachers)
Intro. to Research & Statistics (including research design and introductory stat.)
Intro. to Analysis of Variance (analysis of variance designs through repeated measures)
Measurement Theory (including classical and modern theories)
Multiple Regression (including polynomial & logistic regression, & discrim. anal.)

The two specializations are organized around unique competency areas. These are:

1. Program in Assessment Development, Administration, and Scoring (requires at least two years of teaching experience for admission; requires nine credits of internship, spread over three semesters)

Competency Area 1: Writing both for style and for clarity – writing must be understood by test administrators and their supervisors, and by examinees so that all have the same opportunity to demonstrate their achievement (potential coursework: technical writing; internship)

Competency Area 2: Understanding the impacts of deviations from standardized testing – ability to evaluate and recommend approval or disapproval of testing modifications for local conditions, such as accommodations for students with rare disabilities and unplanned events (potential coursework: classroom assessment; measurement theory; individual testing; assessment for special needs; internship)

Competency Area 3: Knowledge of legal principles for testing and test security (potential coursework: classroom assessment; internship)

Competency Area 4: Knowledge of ways to document how items and their scoring processes reflect domains to be assessed (potential coursework: classroom assessment; internship)

Competency Area 5: Ability to develop and modify scoring materials for constructed-response items and to evaluate whether the items are aimed at the scoring materials (potential coursework: classroom assessment; internship)

Competency Area 6: Knowledge of training techniques used, distribution methods for materials, ways to resolve concerns, and methods used for quality control, in scoring projects (potential coursework: internship)

Competency Area 7: Ability to interpret and explain data used to evaluate the quality of items (potential coursework: classroom assessment; measurement theory; internship)

An example internship for this specialization is with the Assessment Branch of the Maryland State Department of Education (MSDE). The student would spend two days per week at MSDE during the fall and spring semesters. The student would also spend the equivalent of a summer session at MSDE during the MSPAP scoring project. The student would participate in all phases of test development for MSPAP, beginning with task-writer training in the fall semester and ending with the MSPAP administration in the spring semester. An incumbent administration specialist and an incumbent scoring specialist at MSDE would share coordinated responsibilities as the student's mentors. The student will be included at meetings and other relevant activities at MSDE, including the July MSPAP scoring project, and will perform job tasks under the supervision of the mentors. The student will receive nine credits for the internships, three credits for each of the fall semester, the spring semester, and the summer. The student will be required to turn in a log describing each day's activities, insights learned from those activities, and questions raised that are explored during later activities. A brief evaluative report from the mentors will be forwarded to the professor directing the internship at the end of each three-credit experience.

A sample schedule for this specialization is:

Fall Semester:	Classroom Assessment
	Introduction to Research & Statistics
	Technical Writing
	Internship
Spring Semester:	Measurement Theory
	Introduction to Analysis of Variance
	Assessment in Special Education
	Internship
Summer Session:	Multiple Regression
	Internship

2. Program in Data Analysis and Reporting (requires six credits of internship spread over two semesters)

Competency Area 1: Knowledge of and ability to explain the ways scores are processed to add value for interpretation (potential coursework: classroom assessment, measurement theory, introduction to statistics, introduction to program evaluation)

Competency Area 2: Knowledge of and ability to explain fundamental univariate and bivariate statistics, and hypothesis testing including contingency tables, randomized and repeated-measures analysis of variance designs, and multiple and logistic regression (potential coursework: introduction to research, introduction to statistics, multiple regression)

Competency Area 3: Ability to use data editing, database, spreadsheet, and statistical processing packages (potential coursework: short courses at the Computer Science Center; not-for-credit but can be listed on a resume)

Competency Area 4: Ability to perform secondary data analyses that reflect sampling weights and design effects (potential coursework: large scale data analysis)

Competency Area 5: Ability to set up and execute standard and specialized programs that implement applied statistics including exploratory and confirmatory factor analysis, structural equations modeling, and multilevel linear modeling (potential coursework: factor analysis; structural equations modeling; multilevel linear modeling)

An example internship for this specialization is with the Results Branch of the Maryland State Department of Education. The student would spend two days per week for two semesters and would work with a data analysis specialist who would serve as the student's mentor. The student would work on routine analyses at MSDE, analyses that are in response to special issues that arise, and analyses that are planned by the student for the purposes of the internship experience to implement at least one example of each of these techniques: multiple regression, logistic regression, two- or higher-way analysis of variance, exploratory factor analysis, confirmatory factor analysis, causal structural equations modeling, hierarchical linear modeling, and analysis of a large-scale database. The student will receive six credits for the two-semester experience. The student will be required to turn in a log describing each day's activities, insights learned from those activities, and questions raised that are explored during later activities. A brief evaluative report from the mentor will be forwarded to the professor directing the internship at the end of each three-credit experience.

This program includes a year-long structured sequence of courses as prerequisite for the higher-level analyses that must be studied before the student can profit from an internship. It is expected therefore that the student will be able to provide his or her own support for the first year. The prerequisite portion of the program may be taken part-time over a longer time frame, perhaps as a part-time student. It would not be unusual for

students to enter the program with some of these experiences in their undergraduate coursework. As a result, even though the entire program lists two courses more than the minimum required for a masters degree, it is unlikely that any one student would need to take all this coursework in his or her masters program.

A sample schedule for this specialization is:

Fall Semester:	Classroom Assessment Introduction to Research & Statistics SPSS Short Course at the Computer Science Center SAS Short Course at the Computer Science Center
Spring Semester:	Introduction to Analysis of Variance Measurement Theory Database Short Course at the Computer Science Center Spreadsheet Short Course at the Computer Science Center
Summer Session:	Multiple Regression Large-Scale Database Analysis
Fall Semester:	Factor Analysis Multilevel Linear Models Internship
Spring Semester:	Structural Equations Modeling Introduction to Program Evaluation Internship

Feasibility

In our exploratory work, we have received almost universal interest on the part of outside agencies in receiving applications for employment from these programs' graduates. On the other hand, many are reluctant to contribute their sites as placements for paid interns. An example:

> One question people may ask is: What benefit may sponsors get? What is the incentive for agencies to participate? It seems that you are asking them to contribute a lot -- some funds and their time to educate the students. You may want to obtain some training grant from NSF, foundations, and possibly NAEP to support such a program.

Of course, any program will need to be of mutual benefit to be successful. However, it is anticipated that the interns will have valuable skills that they will contribute to each sponsoring organization. While this may be of different degrees of utility in different organizations, it is the unusual site that has a perfect match between what it wants to do and the available staff. Since much of the intern's time will be spent working on the normal projects of the organization as they are "learning by doing," the productivity of

the mentors may actually increase instead of the organization losing capacity. Of course, it remains to be seen whether that is true in the organizations we are able to work with in the future.

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